

## CERNER CRITICAL VALUES

It is important that critical test results are communicated in a timely manner to the licensed caregiver who may act on the results. The communication of critical test results will be monitored for timeliness. Critical test results are defined as those test results that may be an indication of a life-threatening situation or that may have urgent importance to patient management. Critical value limits have been defined and approved by the Medical Executive Committee and are listed with each appropriate test in the alphabetical test list. On a computer generated report these values will be designated by an uppercase C. When a test result exceeds the critical value limit established for that test, the results will be called by the laboratory staff to the licensed caregiver or designee. When calls are made to the caregiver, the laboratory staff will ask for the full name and role of the individual receiving the results. The recipient will be asked to “read-back” the results as they are given by the laboratory staff. This is done to confirm that the person receiving the results heard and documented the results correctly. Documentation of the call is recorded in the Laboratory Information System along with the date and time that the call was made. This is done in accordance with standards defined by The Joint Commission and the College of American Pathologists (CAP). For inpatients, the results will be called to the caregiver for that patient or the unit secretary if the nurse is not able to come to the telephone. For patients at a nursing home, the results will be called to the nursing supervisor. For outpatients, the results will be called to the ordering physician’s office and given to a RN, LPN, or Medical Assistant. If the physician cannot be contacted at his/her office, an attempt will be made to contact the physician through an answering service or home phone. If no contact can be made, the pathologist on-call, may contact the patient. If the pathologist advises the patient, a letter documenting the contact will be sent to the ordering physician the next day.

Therapeutic Drugs					
Acetaminophen	>150.0 mcg/mL	NAPA*	>30 mg/L	Salicylate	>30.0 mg/dL
Carbamazepine	>15.0 mcg/mL	Phenobarbital	>60.0 mcg/mL	Theophylline	>20.0 mcg/mL
Digoxin (12-24 hr post)	>3.0 ng/mL	Phenytoin (Dilantin)	>30.0 mcg/mL	Tobramycin Peak	>12.0 mcg/mL
Gentamicin Peak	>12.0 mcg/mL	Primidone	>15.0 mcg/mL	Tobramycin Trough	>2.0 mcg/mL
Gentamicin Trough	>2.5 mcg/mL	Procainamide*	>or = 14 mg/L	Valproic Acid	>200.0 mcg/mL
Lidocaine*	> or = 6 mg/L	Quinidine*	> or = 10 mg/L	Vancomycin Trough	>20.0 mcg/mL
Lithium	>1.5 mmol/L	*Test performed by reference lab			

Hematology		Chemistry		Blood Gases	
*WBC	<2.0 K/mcL	CO <sub>2</sub>	<10 >45 mmol/L	pH (arterial)	<7.25 >7.55 units
ABS Neutrophil Count	<1.0 K/mcL	Calcium	<7.0 >13.0 mg/dL	pO <sub>2</sub>	<55 mm Hg
Hematocrit	<21% >70%	Calcium, Ionized	<0.78 >1.58 mmol/L	pCO <sub>2</sub>	>80 mm Hg

Blasts	Present	Glucose	<40 >500 mg/dL	%COHB	>14%
*Platelet Count	<50 >1000 K/mcL	Lactic Acid	>4.0 mmol/L	pH (venous)	<7.22 >7.52 units
*PTT	>150 sec	Magnesium	>5.0 mg/dL		
PT (INR)	> or = 5.0	Phosphorus	<1.0 mg/dL		
Blood Parasite (Malaria)	Present	*Potassium	<2.8 >6.2 mmol/L		
Fibrinogen (Massive Transfusion Protocol)	<120 mg/dL	Sodium	<120 or >160 mmol/L		
* Exceptions (Defined with input from appropriate clinical department)					
Hemodialysis patients – Medicine/Nephrology: Call Potassium if >6.5 mmol/L					
Radiation Oncology patients - Radiation Oncology: Call Platelets <20.0 K/mcL					
Hematology/Oncology patients – Medicine/Hem/Oncology: Call Platelets <20 K/cmm; WBC <2.0 K/mcL or <1.0 K/mcL neutrophils; subsequent Blasts (first blast is called)					
Open Heart Surgery patients during surgery – Do not call					
Infant <2 days old – Call Potassium if >7.7 mmol/L					

Microbiology	Transfusion Services
Positive blood cultures	Positive Direct Coomb's test on Cord blood specimen
Positive CSF – Gram stain, culture or Cryptococcus antigen	Positive Antibody screen with an incompatible crossmatch, if the problem: 1) is not quickly rectified; 2) will cause delay in dispensing blood; 3) will result in not having blood available for surgery.
Positive normally sterile body fluid – Gram stain or culture	Evidence of hemolytic transfusion reaction – indicated by any or all of the following: 1) Positive Direct Coomb's test (DAT negative pre- transfusion); 2) Visible hemolysis (not present pre- transfusion); 3) Presence of free hemoglobin, brown/black urine; 4) Significant ABO mismatch; 5) Clerical error resulting in an incorrect transfusion; 6) Positive blood culture or bacteria seen on Gram stain.

Neonate Bilirubin					
Age Hours	Critical Value	Age Hours	Critical Value	Age Hours	Critical Value
0-18	6.9 mg/dL	39-40	12.2 mg/dL	64-65	15.5 mg/dL
18-19	7.2 mg/dL	40-42	12.3 mg/dL	65-67	15.6 mg/dL
19-20	7.4 mg/dL	42-43	12.4 mg/dL	67-69	15.7 mg/dL
20-21	7.5 mg/dL	43-44	12.5 mg/dL	69-70	15.8 mg/dL
21-22	7.6 mg/dL	44-45	12.7 mg/dL	70-72 (3 days)	15.9 mg/dL
22-23	7.7 mg/dL	45-46	12.8 mg/dL	72-78	16.3 mg/dL
23-24 (1 day)	7.8 mg/dL	46-47	13.0 mg/dL	78-84	16.7 mg/dL
24-25	8.1 mg/dL	47-48 (2 days)	13.2 mg/dL	84-90	17.1 mg/dL
25-26	8.4 mg/dL	48-49	13.3 mg/dL	90-96 (4 days)	17.4 mg/dL
26-27	8.6 mg/dL	49-50	13.5 mg/dL	96-102	17.5 mg/dL
27-28	8.9 mg/dL	50-51	13.7 mg/dL	102-108	17.5 mg/dL
28-29	9.2 mg/dL	51-52	13.8 mg/dL	108-114	17.6 mg/dL
29-30	9.4 mg/dL	52-53	14.0 mg/dL	114-120 (5 days)	17.6 mg/dL
30-31	9.7 mg/dL	53-54	14.2 mg/dL	120-126	17.5 mg/dL
31-32	10.0 mg/dL	54-55	14.3 mg/dL	126-138	17.4 mg/dL
32-33	10.3 mg/dL	55-56	14.5 mg/dL	138-144 (6 days)	17.3 mg/dL
33-34	10.5 mg/dL	56-57	14.7 mg/dL	144-150	17.5 mg/dL
34-35	10.8 mg/dL	57-58	14.8 mg/dL	150-156	17.7 mg/dL
35-36	11.1 mg/dL	58-59	15.0 mg/dL	156-162	17.9 mg/dL
36-37	11.4 mg/dL	59-61	15.2 mg/dL	162-168 (1 week)	18.2 mg/dL
37-38	11.6 mg/dL	61-62	15.3 mg/dL	1 week – 1 month	18.0 mg/dL
38-39	11.9 mg/dL	62-64	15.4 mg/dL	1 month – 18 yrs	18.0 mg/dL

Neonates (Birth to 1 Month)					
Hematocrit	<21% >70%	Arterial pO <sub>2</sub>	<40 mm Hg >110 mm Hg	Urine Glucose	Positive
Glucose	<40 mg/dL >200 mg/dL	Capillary pH	<7.20 units >7.50 units		
Potassium	Birth-2dys: <2.8 mmol/L >7.7 mmol/L 2 dys-3mos: >6.5 mmol/L	Capillary pCO <sub>2</sub>	>70 mm Hg		

Refer to Laboratory Services Administrative Policy A-SP-12 for additional information.